



**Massachusetts Bay  
Transportation Authority**

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## **Red Line/Orange Line Improvement Program Update**

**Vehicle Procurement, Infrastructure Improvements,  
State of Good Repair Improvements and Signal Upgrades**

**October 1, 2018**



## OVERVIEW

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The following summary provides an update to the FMCB on the progress of the \$1.98 billion Red Line/Orange Line Improvement Program; which includes new Vehicle Procurement, Infrastructure Improvements, State of Good Repair Improvements and Signal Upgrades.

This program supports the MBTA's goal to improve the level of service on the Red Line to 3 minute headways and the Orange Line to 4.5 minute headways. This would increase capacity by 50% on the Red Line and 40% on the Orange Line from current rates.



## Red Line/Orange Line Improvement Program

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Red Line

Orange Line

**Total \$1,982.03M**

NEW VEHICLE PROCUREMENT PROGRAM \$1,009.00M

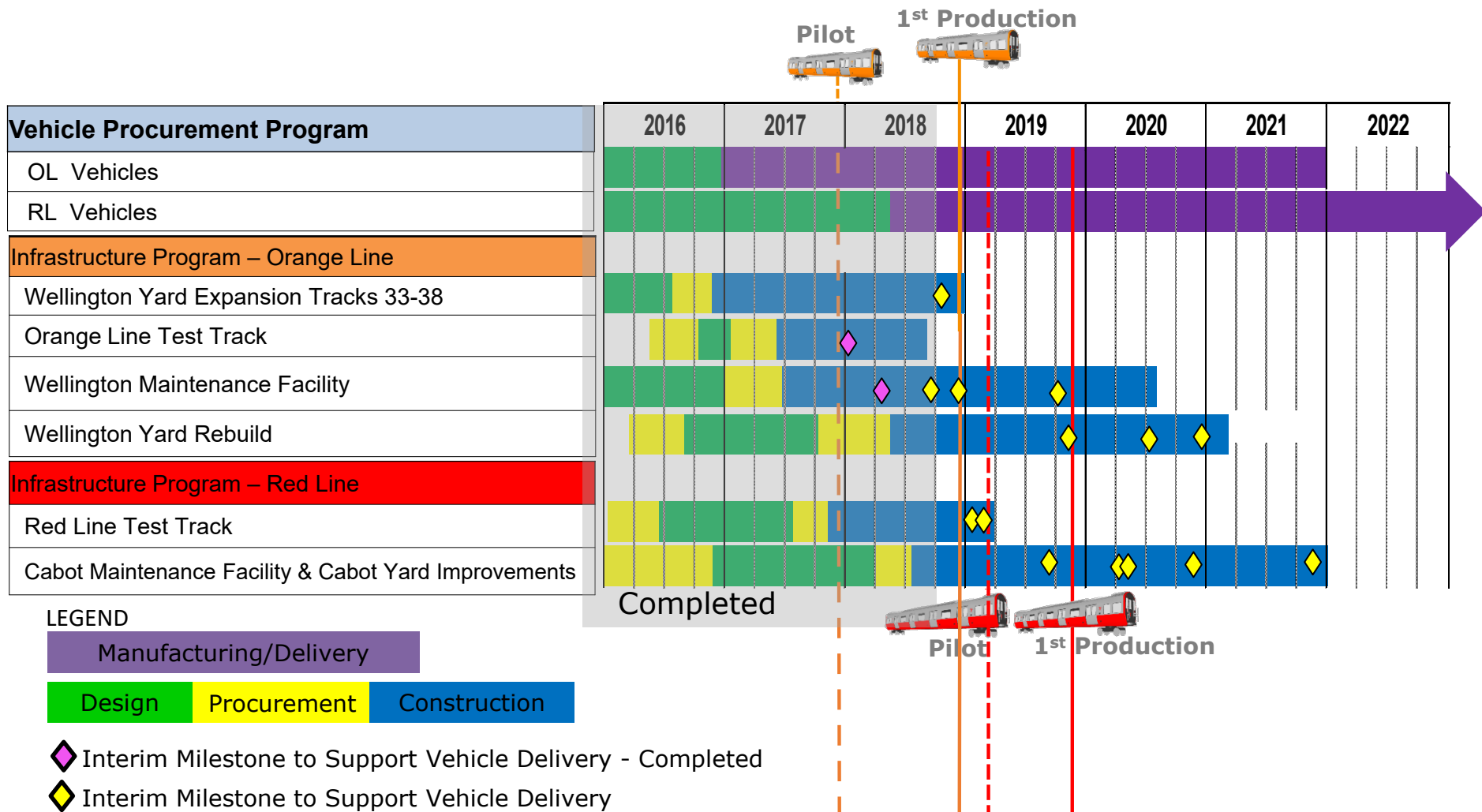
INFRASTRUCTURE IMPROVEMENTS PROGRAM \$470.36M

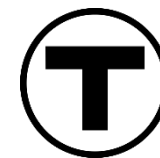
SIGNALS UPGRADE PROJECTS \$350.95M

STATE OF GOOD REPAIR PROJECTS \$151.72M

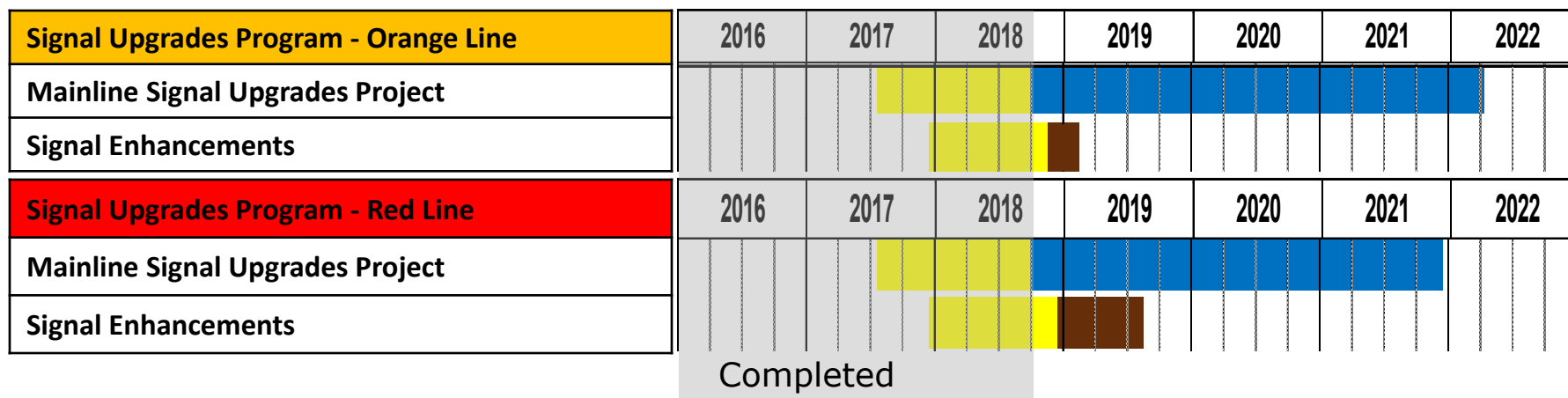


## Red Line and Orange Line Schedule by Project





## Red Line/Orange Line Schedule – Signals Upgrades



### LEGEND

Procurement	Design/Build
Procurement	MBTA Installation



## New Vehicle Procurement Program

### **New Vehicle Procurement Program**

Total Project Value: \$ 1,009,871,671

Expenditure to date: \$ 188,490,884

Carbuilder Percent Complete: 18.66%



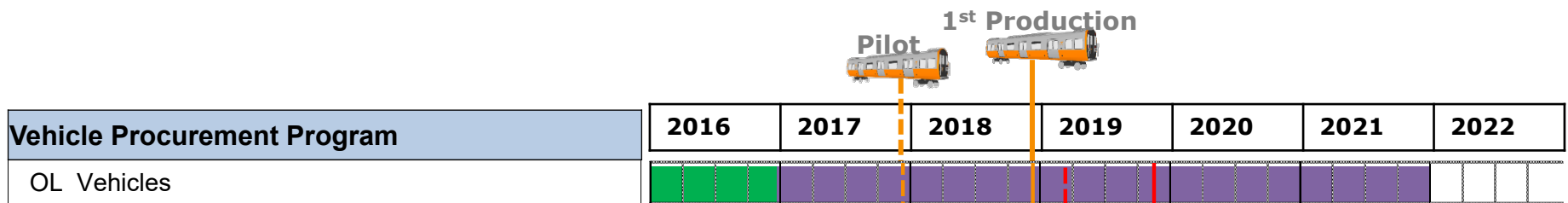
- Replace 218 Red Line cars
- 34 new cars
- Total = 252 vehicles



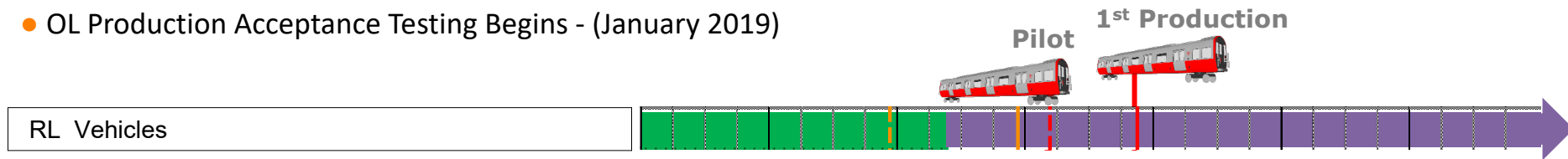
- Replace 120 Orange Line cars
- 32 new cars
- Total = 152 vehicles



## Vehicle Procurement Project Status – Current/Look Ahead



- OL Pilot Car Qualification & Acceptance Testing - (through December 2018)
- OL Production Delivery from Springfield Facility Starts - (December 2018)
- OL Production Acceptance Testing Begins - (January 2019)



- RL Carbody FAI - (November 2018)
- RL Complete Vehicle FAI (Changchun) – (February 2019)
- RL Delivery of Pilot Cars - (March 2019)

### LEGEND





## Orange Line Vehicle Procurement Project Status

A full vehicle level First Article Inspection (FAI) of Married Pair 3 was performed at Wellington Carhouse September 26-27, 2018.







## Red Line Vehicle Procurement Project Status

The Red Line pilot carshells are under construction in Changchun, China. The first Red Line carbody will be completed in November 2019.

Red Line Pilot Cars are schedule for delivery in the Spring of 2019.



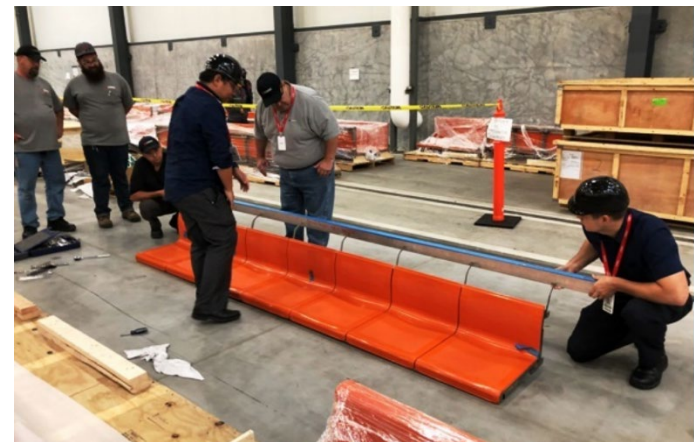


## Production Vehicle Final Assembly – Springfield MA

Final assembly on the first four cars is continuing in Springfield with the installation of interior panels and wiring.

These first four (4) Orange Line cars are scheduled for delivery in December 2018.

There are currently 10 carbodies in the plant, with an additional 12 on the sea, having shipped from Changchun, China on September 23, 2018.







## Orange Line Projects: Wellington Yard Expansion Tracks 33 to 38

### **JF White**

Construction NTP: 12/05/2016

Construction Substantial Completion:

Contractual: 06/23/18

Projected: 01/04/19\*

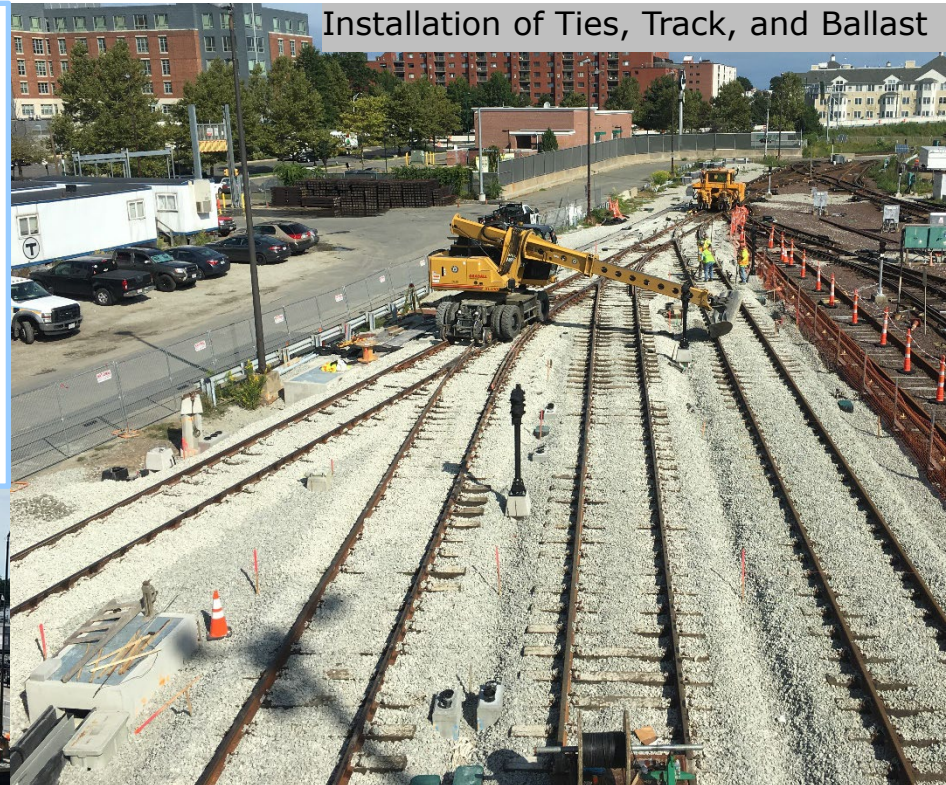
Construction Budget: \$17,977,777

Construction Expenditures to Date: \$6,863,589

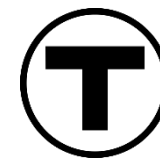
Construction Percent Complete: 63%

\*Adjusted to account for unforeseen environmental work

Installation of Ties, Track, and Ballast







## Orange Line Projects: Orange Line Test Track

### **LM Heavy**

Construction NTP: 06/20/17

Construction Substantial Completion: 8/29/18

Contractual: 09/11/18

Actual: 08/29/18

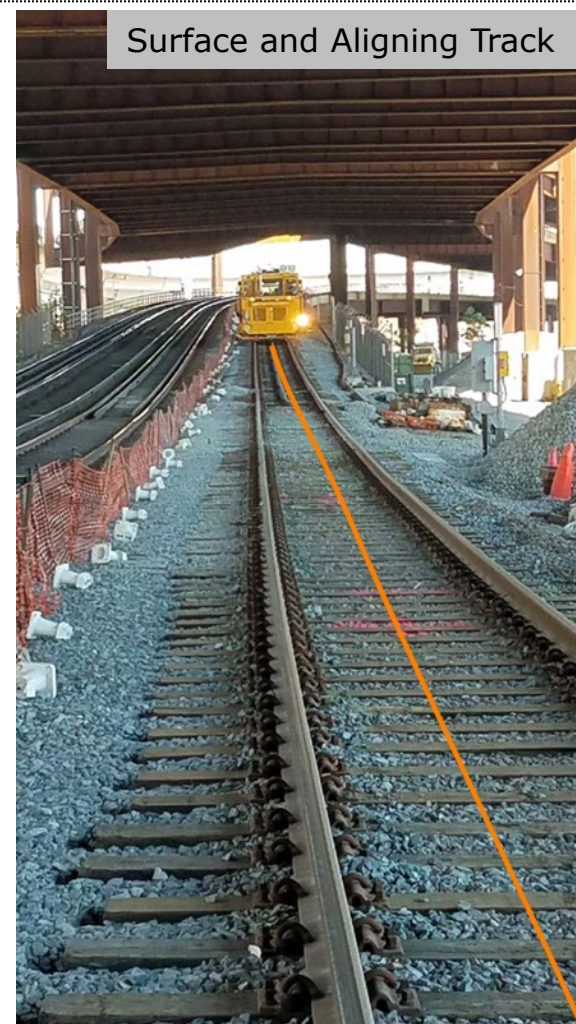
Construction Budget: \$5,867,000

Construction Expenditures to Date: \$3,939,146

Construction Percent Complete: 99%



Placing Ballast



Surface and Aligning Track





## Orange Line Projects: Wellington Maintenance Facility

### **Barletta Heavy Division**

Construction NTP: 06/30/17

Construction Substantial Completion:

Contractual: 08/04/20

Projected: 08/04/20

Construction Budget: \$72,582,000

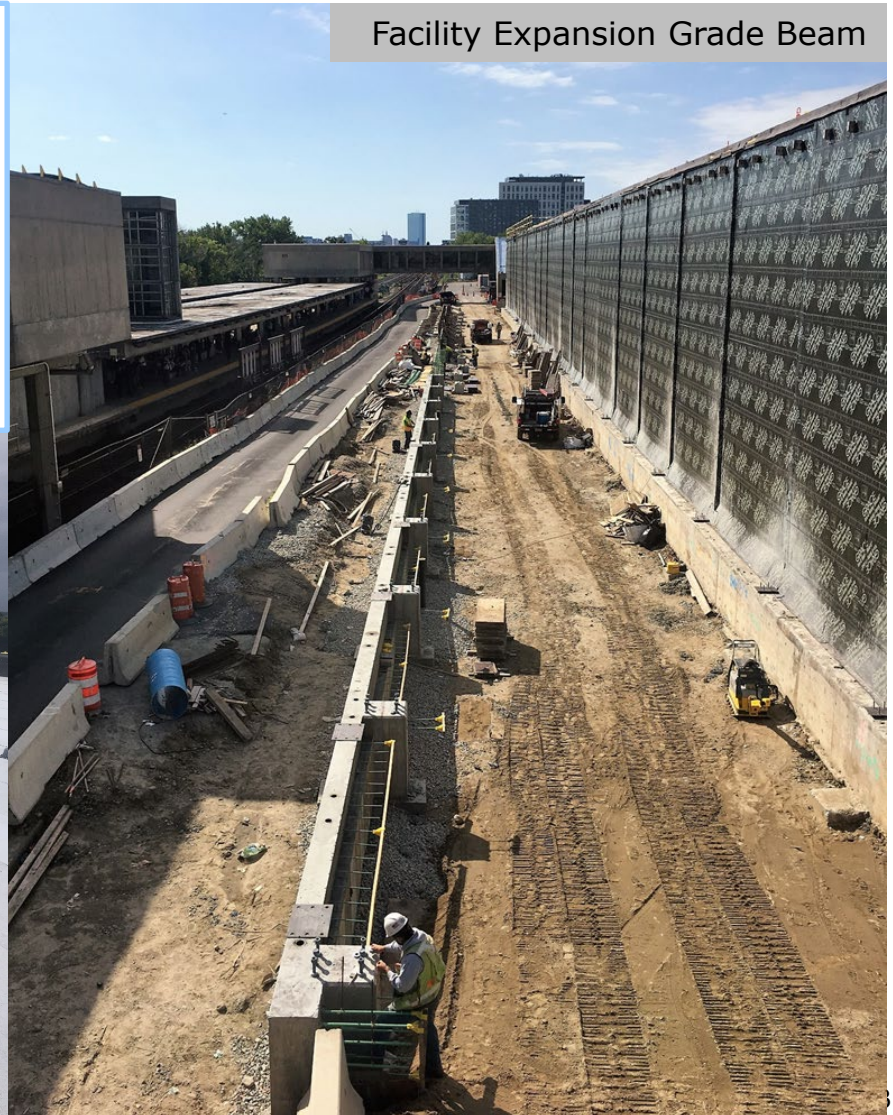
Construction Expenditures to Date: \$17,283,335

Construction Percent Complete: 31%

\* Forecast completing on schedule

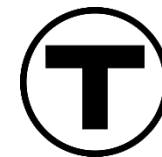


Roof



Facility Expansion Grade Beam





## Orange Line Projects: Wellington Yard Rebuild

### **Barletta Heavy Division**

Construction NTP: 05/31/18

Construction Substantial Completion:

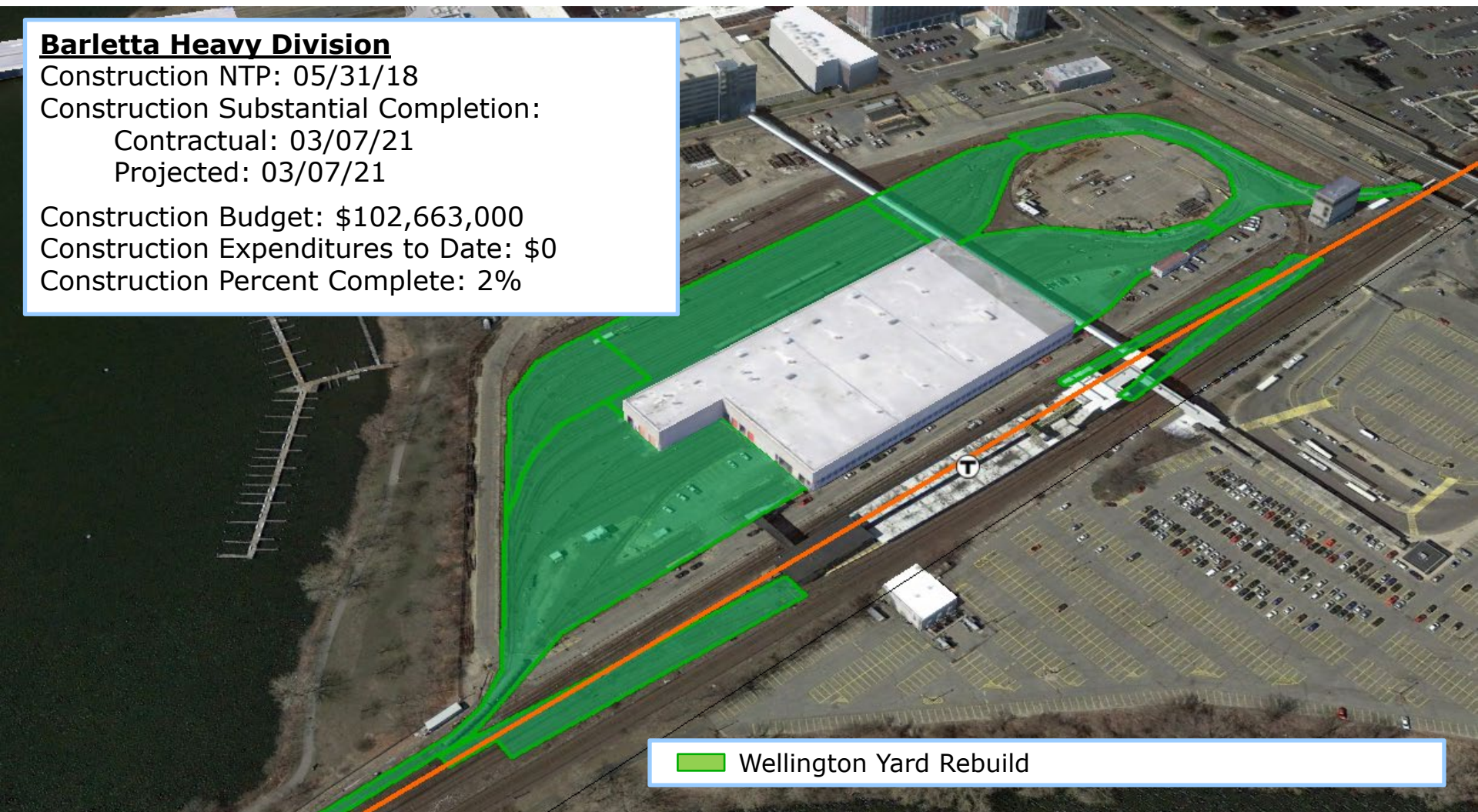
Contractual: 03/07/21

Projected: 03/07/21

Construction Budget: \$102,663,000

Construction Expenditures to Date: \$0

Construction Percent Complete: 2%







## Red Line Projects: Red Line Test Track

### **Barletta Heavy Division**

Construction NTP: 11/17/17

Construction Substantial Completion:

Contractual: 04/07/19

Projected: 04/07/19

Construction Budget: \$21,269,000

Construction Expenditures to Date: \$432,705

Construction Percent Complete: 30%



Retaining Wall



VTF Foundation & ReBar



New Sub Ballast for new  
lead Track From Cabot Yard





## Red Line Projects: Cabot Yard & Maintenance Facility Improvements

### **LM Heavy/Lane Construction**

Construction NTP: 08/02/18

Construction Substantial Completion:

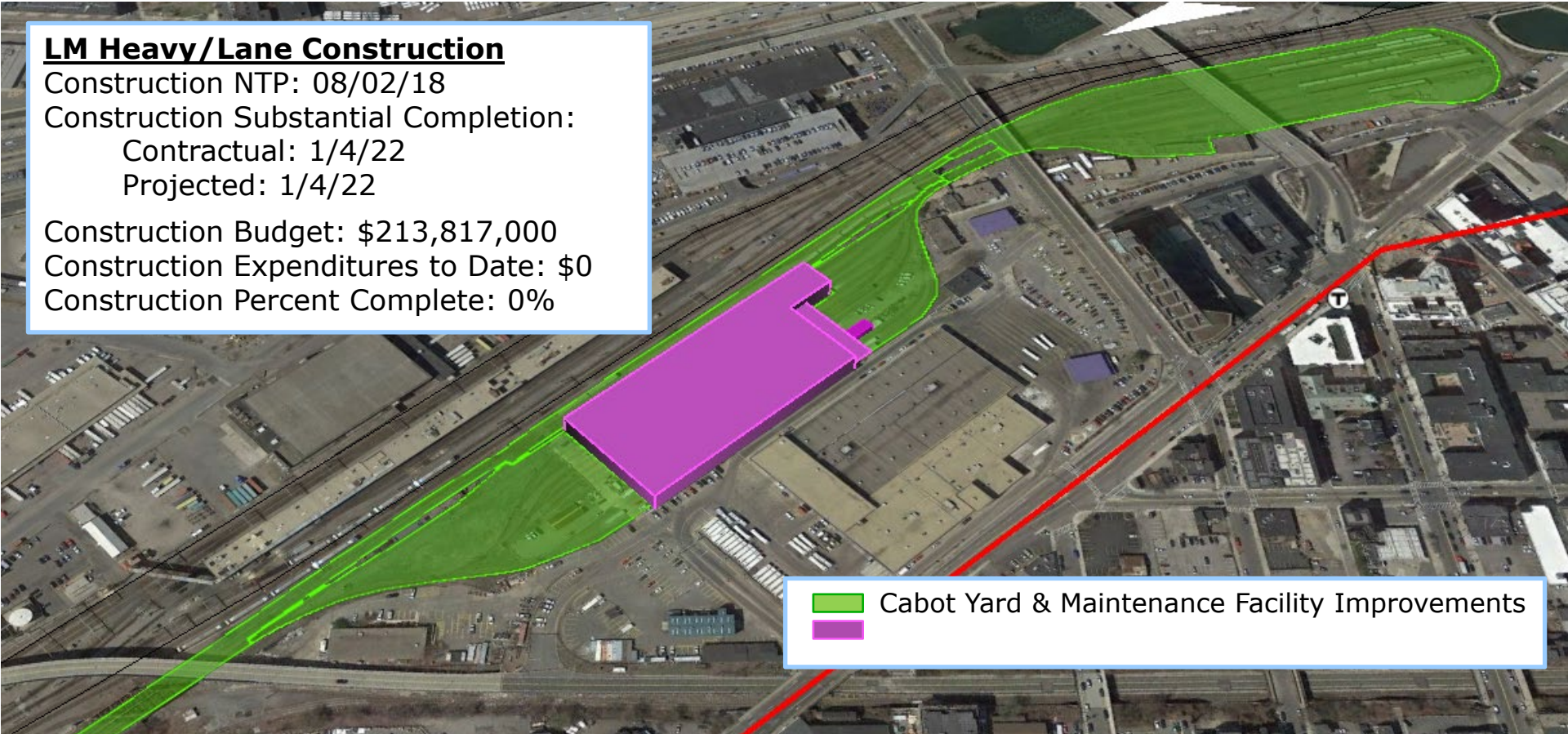
Contractual: 1/4/22

Projected: 1/4/22

Construction Budget: \$213,817,000

Construction Expenditures to Date: \$0

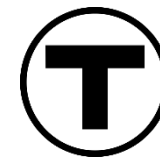
Construction Percent Complete: 0%



 Cabot Yard & Maintenance Facility Improvements







## Signals Upgrade Projects Status

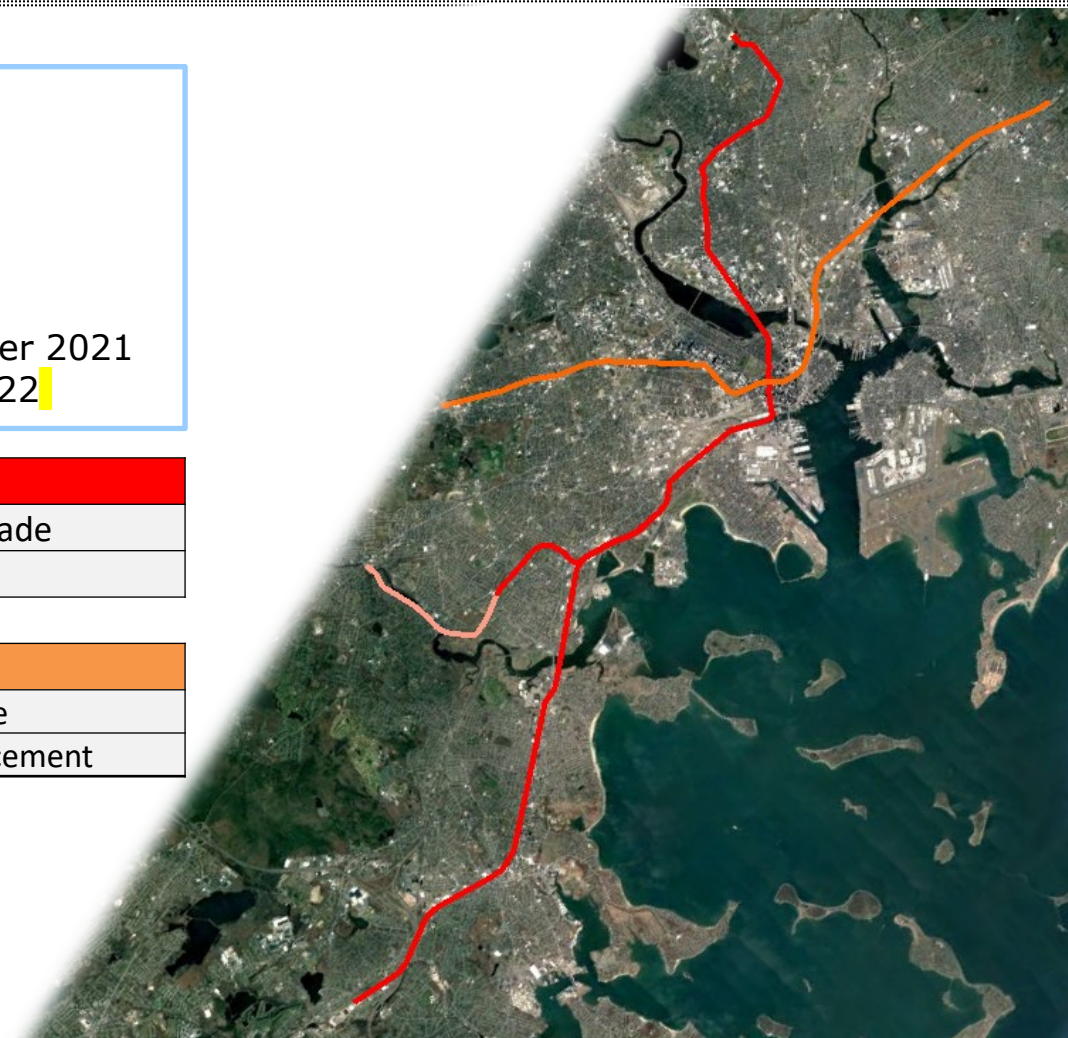
RFP Issued – 02/12/18  
Proposer Meetings – 05/30/18  
Proposals Due – 08/20/18  
Public Price Opening – 9/20/18  
NOA – October 2018  
NTP – October 2018  
Substantial Completion RL – December 2021  
Substantial Completion OL – April 2022

### Red Line

RL Signaling and Train Control System Upgrade  
RL Columbia Junction Phase II

### Orange Line

OL Signaling and Train Control System Upgrade  
OL South West Corridor Wayside Signal Replacement





## State of Good Repair Projects Status – Bridge Strengthening

### **Status**

#### **Bridge Repairs**

RL Substantial Completion – 11/01/18

OL Substantial Completion – 11/30/18

#### **Long Fellow Approach – Interim Repairs**

Substantial Completion – 12/31/18

### **Red Line**

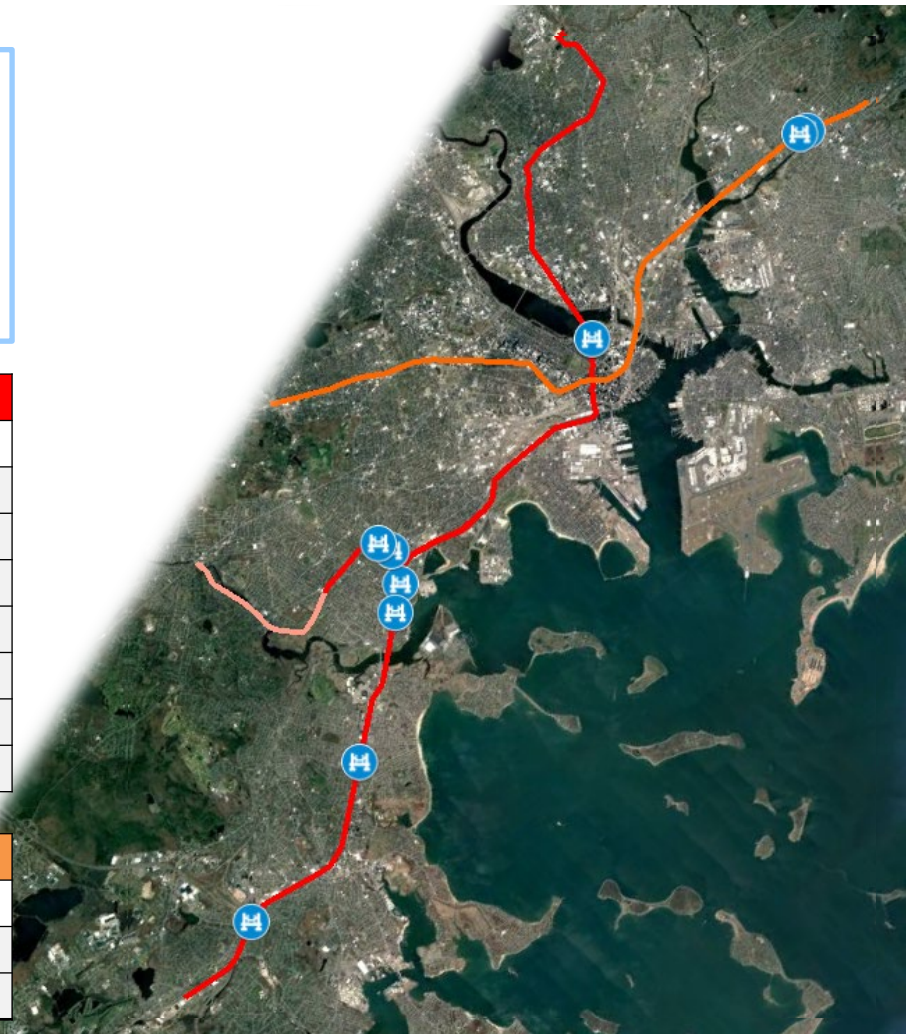
#### Bridge Repairs

- Granite Spur-B-21-069 (A23)
- Conley St.-B-16-136 (A38)
- Fields Corner Busway-B-16-418 (A3N)
- Victory Rd -B-16-134 (A36)
- Geneva Ave-B-16-142 (A3D)
- Long Fellow Approach - Interim Repairs

### **Orange Line**

#### Bridge Repairs

- Charles Street-M-01-003 (85)
- Adams Street-M-01-002 (85J)





## Vehicle Procurement & Improvement Program Collaboration

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- Accompanied vehicle procurement program on foam block clearance test to indicate potential clearance interfaces and collect additional data as needed.
- Coordinated arrival of 4 Pilot Cars delivery at the end of August.
- Update of vehicle storage models to analyze storage impacts due to latest contractor schedule.
- Vehicle/Infrastructure scope coordination (ATO, reinforcement of pits, etc.)